

## A New and a Newly Recorded Species of the Ant Genus *Amblyopone* (Hymenoptera: Formicidae) from Japan

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**Abstract.** A new ponerine ant, *Amblyopone caliginosa*, is described based on the worker and female, and *A. sakaii* is newly recorded from Japan. A Hawaiian species, *A. zwaluwenburgi*, much resembling *A. caliginosa* is redescribed based on the types.

**Key words:** *Amblyopone*, new species, new record, Japan, Formicidae.

### Introduction

Onoyama (1989) recognized 4 species of the ant genus *Amblyopone* in Japan, 2 described and 2 nomenclaturally undetermined: *A. fulvida* Terayama, *A. silvestrii* (Wheeler), *A. sp. 3*, and *A. sp. 4*. In this paper I describe *A. sp. 3* as a new species, and report *A. sp. 4* as *A. sakaii* Terayama originally described from Taiwan, which is new to Japan.

The new species to be described is similar to *A. zwaluwenburgi* (Williams). Since the latter is not well known, indeed Taylor (1978) could not examine the head, a redescription is given prior to the description of the new species.

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### Measurements and Indices

Head length (HL): maximum length of head in full-face view, from the anteriormost point of clypeus (including clypeal denticles) to the posteriormost point of occiput.

Head width (HW): maximum width of head in full-face view, excluding eyes.

Cephalic index (CI):  $HW/HL \times 100$ .

Mandible length (ML): maximum length of mandi-

ble, from the visible outer basal point to the apex.

Scape length (SL): length of scape excluding radicle.

Scape index (SI):  $SL/HW \times 100$ .

Width of frontal lobes (FLW): maximum width between the outermost margins of frontal lobes in dorsal view.

Eye length (EL): maximum length of eye.

Pronotal length (PL): maximum length of pronotum in dorsal view.

Pronotal width (PW): maximum width of pronotum in dorsal view.

Mesoscutum length (MsL): maximum length of mesoscutum in dorsal view (female).

Mesoscutum width (MsW): maximum width of mesoscutum in dorsal view (female).

Weber's length of mesosoma (WL): maximum diagonal distance in lateral view, from the base of anterior slope of pronotum (namely excluding cervix) to the propodeal lobe (=metapleural lobe).

Petiole node length (PtNL): midline length of petiole node in dorsal view.

Petiole width (PtW): maximum width of petiole in dorsal view.

Gastral tergite I length (G1L): midline length of gastral tergite I (abdominal tergite III, postpetiole) in dorsal view.

Gastral tergite I width (G1W): maximum width of gastral tergite I in dorsal view.

Gastral tergite II length (G2L): midline length of gastral tergite II (abdominal tergite IV) in dorsal view.

Gastral tergite II width (G2W): maximum width of gastral tergite II in dorsal view.

All measurements were carried out with a direct

reading micrometer apparatus (made by Kogaku Co.; reading error:  $\pm 0.005$  mm) attached to a stereoscopic microscope under a magnification of  $80\times$  to  $120\times$ , and given in mm.

*Amblyopone zwaluwenburgi* (Williams)

*Stigmatomma* (*Fulakora*) *zwaluwenburgi* Williams, 1946: 639–640, fig. 1. Worker. Type locality: Experiment Station, H. S. P. A., Honolulu, Oahu, Hawaii, (2 workers, ii–1941, 26–x–1945, R. H. Van Zwaluwenburg leg.). [Headless holotype and a paratype workers in BPBM examined. No other types exist (Williams, 1946).]

*Amblyopone zwaluwenburgi*: Brown, 1960: 169. [*Stigmatomma* synonymized under *Amblyopone*.]; Taylor, 1978: 833.

**Worker.** HL -, 0.40; HW -, 0.40; CI -, 100; ML -, 0.30; SL -, 0.20; SI -, 50; PL 0.29, 0.27; PW 0.25, 0.26; WL 0.52, 0.53; PtNL 0.15, 0.15; PtW 0.21, 0.23; G1L 0.15, 0.17; G1W 0.26, 0.29 (Headless holotype and head-bearing paratype were measured).

Head in full-face view as long as wide, with posterior margin slightly concave medially, sides feebly convex, slightly diverging anteriorly. Mandibles slender, their outer margins feebly convex (almost straight at basal 2/3), with 7 teeth: an acute apical, a very minute (hardly recognizable) subapical, and 5 teeth which are single ranked and become shorter proximally; the distal 2 of the 5 teeth recurved, the middle feebly recurved, and the proximal 2 almost conical. Genal teeth absent. Clypeal apron feebly convex, with 5 blunt-tipped, conical teeth of nearly equal size. Frontal lobes close to each other, separated by a shallow, narrow linear groove. Antennae 11-segmented. Scapes a little curved near the apex, extending back to the posterior 1/3 of head. Funicular segments I and II 1.5 times as wide as long, III to VI more than twice as wide as long, VII to IX twice as wide as long, X (apical) twice as long as wide (apical segment width 0.065 mm). Eyes absent.

Mesosoma in dorsal view widest at the middle of pronotum and narrowed at the base of propodeum. Pronotal dorsum almost flat, not marginate laterally. Promesonotal suture distinct, situated at the middle of mesosomal dorsum. Metanotal suture absent. Mesonotal to propodeal dorsum 1.2 times as long as wide, with sides diverging posteriorly; declivity feebly concave, marginate laterally. Petiole with a subpetiolar process, which is probably anteriorly produced (unable to see fully).

Head and mesosoma a little shining, propodeal

declivity and gaster more shining. Mandibles with several longitudinal rugulae. Head, mesosoma and petiole finely and densely granulate. Gaster sparsely punctate.

Body with dense decumbent to appressed pubescence. Head dorsum with several erect setae. Scapes each with a long seta near the base and a longer seta on the basal 1/6. Mesosomal dorsum with several short erect setae. Petiolar dorsum with a few erect setae. Gastral tergites with numerous erect setae.

Body entirely brownish yellow. Scapes, funicular segment I, and legs a little lighter colored.

**Remarks.** I could not obtain the whole figure of the subpetiolar process due to the twisted posture, but perhaps it is small. The antennae of the paratype are 11-segmented, although in the Williams' (1946) illustration the holotype has 12-segmented antennae (the present holotype bears no head).

This species is known only from the types collected in the Hawaii.

*Amblyopone caliginosa* sp. nov.

[Japanese name: Hime-nokogiri-hariari]

(Figs. 1–9)

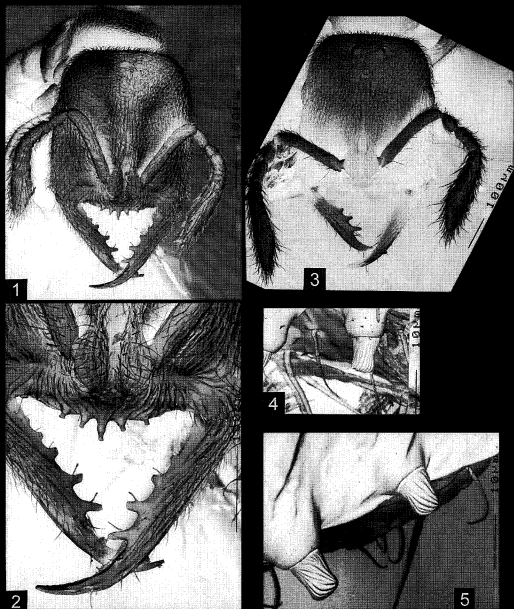
*Amblyopone* sp.: Sonobe, 1972: 179. [Specimens examined.]

*Amblyopone* sp. 3: Onoyama, 1989: 12, figs. 3.18b, 3.19b.

[Specimens examined.]

**Worker.** HL 0.51, 0.48–0.52; HW 0.43, 0.42–0.44; CI 84, 82–88; HD 0.26, 0.26–0.27; ML 0.36, 0.35–0.38; SL 0.24, 0.23–0.25; SI 56, 52–60; FLW 0.10, 0.10–0.11; PL 0.26, 0.23–0.27; PW 0.29, 0.29–0.30; WL 0.59, 0.58–0.62; PtNL 0.15, 0.14–0.15; PtW 0.20, 0.21–0.22; G1L 0.20, 0.17–0.19; G1W 0.29, 0.28–0.30; G2L 0.19, 0.18–0.22; G2W 0.37, 0.34–0.37. (Holotype and 5 paratypes were measured and respectively presented.)

Head (Fig. 1) in full-face view rectangular with very feebly convex posterior margin and rounded posterolateral corners, sides very weakly convex and diverging anteriorly. Mandibles (Fig. 2) slender with nearly straight outer margins except for apical 1/4, with 7 teeth; apical tooth long and acute, preapical tooth small and triangular, and 5 single-ranked teeth decreasing in size basad, elongate trapezoidal (distal 2) to short trapezoidal (basal 2nd and 3rd) and bluntly triangular (basalmost) in dorsal view. Palp formula 2 (maxillary), 3 (labial) (counted in a paratype by its SEM pictures). Genal teeth absent. Anterior clypeal border broadly and gently convex, with 5 peg-like teeth: the longest median tooth, a pair of lateral ones of medium length, and a pair of more lateral short

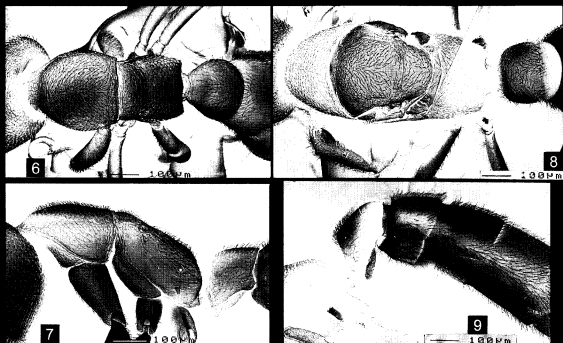


Figs. 1-5. *Amblyopone caliginosa* sp. nov. — 1, Head of worker in full-face view; 2, frontal lobes, clypeus, and mandibles of worker in dorsal view; 3, head of female in full-face view; 4, left lateral denticle of clypeus of worker in dorsal view; 5, left two lateral denticles of clypeus of female in dorsal view.

ones; the surfaces of apical 0.007 to 0.011 mm of all teeth with a little curved longitudinal carinae (Fig. 4). Frontal lobes (Fig. 2) more or less wide, separated by a somewhat wide groove, which is more widened and deepened posteriorly and thus forms a deep oval concavity, and then is narrowed and extends back to the midlength of head. Antennae with 11 segments. Scapes a little curved at apical 1/6, extending back to the posterior 1/3 of head. Funicular segment I 1.5 times as long as wide and as long as segments II and III together, segments II to VIII much wider than long, segment IX 1.5 times as wide as long, apical

segment twice as long as wide (apical segment width 0.075 mm). Eyes absent.

Mesosoma in dorsal view (Fig. 6) widest at the midlength of pronotum. Pronotum (excluding cervix) slightly wider than long; dorsum in profile (Fig. 7) convex, sides in dorsal view convex. Promesonotal suture flexible. Mesonotum transverse, the dorsum in profile feebly convex. Metanotal groove distinct but shallow, especially shallow at dorsum. Propodeal dorsum wider than long, in profile straight; declivity nearly flat, its lateral margins slightly raised. Petiole 1.3 times as wide as petiole, slightly longer than



Figs. 6-9. *Amblyopone caliginosa* sp. nov. — 6, Mesosoma and petiole of worker in dorsal view; 7, mesosoma and petiole of worker in lateral view; 8, mesosoma and petiole of female in dorsal view; 9, petiole to gastral segment III (abdominal segment V) of female in lateral view.

petiolar node. Subpetiolar process (Fig. 7) lobe-like, producing anteroventrally. Gastral tergite II wider than gastral tergite I, 1.7 times as wide as long. Gastral apex not laterally compressed; sting stout.

Dorsa of head and mandibles longitudinally rugulose. Scapes smooth. Mesosoma smooth except for hair pits, which make the surface punctulate. Punctulation on propodeum sparser than in other parts of mesosoma. Dorsa of pronotum and mesonotum with weak transverse rugulae. Petiole nearly smooth. Gaster and legs smooth.

Fine, short erect to subdecumbent hairs densely distributed on body and appendages, but hairs on mesosomal sides are subdecumbent to decumbent.

Body color slightly brownish yellow to yellowish brown.

**Female.** HL 0.53; HW 0.44; CI 83; HD 0.30; ML 0.35; SL 0.26; SI 59; FLW 0.11; EL 0.09; PL 0.18; MsL 0.27; MsW 0.36; WL 0.77; PtNL 0.15; PtW 0.24; G1L 0.23; G1W 0.33; G2L 0.25; G2W 0.41. (a paratype was measured.)

Slightly larger than workers. Head as in Fig. 3 and mesosoma to gaster as in Figs. 8 and 9. Similar to workers, with the usual caste differences. Three ocelli well developed. Compound eyes large, with relatively long, erect hairs. Apical parts of clypeal denticles with a little curved longitudinal carinae (Fig. 5) as in workers. Petiole in profile (Fig. 9) a little pro-

portionately lower than in workers.

**Holotype worker:** Cape Manazuru, Kanagawa Pref., 13. xii. 1981, K. Masuko leg. (Type No. OMNH TI 102, Osaka Museum of Natural History)

**Paratypes:** 1 female and 4 workers, data same as the holotype; 1 worker, Cape Manazuru, Kanagawa Pref., 19. ix. 1982, K. Masuko leg. (Osaka Museum of Natural History and collection of K. Onoyama, Obihiro University)

**Other material examined.** 1 worker, around Oonami-no-ike, Kirishima area, Kagoshima Pref., 1400 m above the sea level, 25. vii. 1971, K. Morikawa leg.

**Distribution.** Honshu, Kyushu.

**Remarks.** *A. caliginosa* resembles *A. zwaluwenburgi* in having 11-segmented antennae, 5-toothed clypeal apron, and mandibles with single-ranked 7 teeth. However, it differs from the latter in having longer head with the sides more diverging anteriorly, relatively longer scapes, median clypeal tooth longer than others (5 teeth subequal in size in *A. zwaluwenburgi*), mandibular teeth not recurved, mesosomal dorsum in profile convex (almost straight in *A. zwaluwenburgi*), and larger body size.

The following key is to distinguish between *A. caliginosa* and *A. zwaluwenburgi*:

Clypeal teeth equal in length. Head as long as wide. Mesosomal dorsum in profile almost straight  
..... *A. zwaluwenburgi*